

B.C. EDITION

Vol. 3 No. 4 APRIL 90

The

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## FROM THE EDITOR



Spring is here, the sun is shining today as we paste up our April issue. It is tough to keep everyone inside, away from the beach, and working, but the evidence that we did it in your hands. Gray-scale should be the poster for a monitor, not a description of our complexion after too many hours at the keyboards. Hope you are getting out into the sun once in a while too.

### This Month

Workstations were once the treasured preserve of engineers and acco-

unties. These powerful, multi-tasking, multi-user computers are starting to show up in a variety of business applications. They are still not cheap, but for the right "highly-leveraged" person, they can be a very worthwhile investment. Thanks to Willam Barr for this overview of what is available. Rudy Green is back with an "under the hood" look at how to maintain your own computer. He has some hot tips on how to keep that old box of chips functional.

Laptop computers are turning out to be the hit product of the 90's, offering computing power in a movable package. Four models are reviewed this issue.

If laptops are the winners in computing, fax boards or fax modems are the peripherals to include with your computer. This month, we look at a range of fax products for the Macintosh and PC markets. Certainly for a business with a regular set of customers such as ours, they are an invaluable tool. At *The Computer Paper*, we send out a "broadcast fax" at the beginning of the month to let our advertisers know what will be in the next issue of the paper. (call me at 733-5386 if you want to email or fax). Because it is done from the computer, we can update the list from our database relatively easily. In an increasing number of cases, our fax-out is being received by a fax board at the other end of the phone. The file ends up on the customer's hard drive, where he/she can read it and then have the option to delete the file or print it at that point — a very useful technology.

Now if only E-mail were so accessible and universal. But that is another issue — next month's in fact. We will be focusing on telecommunications. Also featured will be an article on software for manufacturing.

Let our advertisers know that you saw their advertisement in *The Computer Paper*. It keeps them aware that their investment in advertising is paying off, and that allows us to bring you more coverage of the rapidly changing computer market. Thank you.

Enjoy the issue.

*Kirtan Singh Khosla*

Kirtan Singh Khosla  
Publisher/Editor

## Coming Editorial Schedule

DATE	DETERMINATION	TOPIC	COVER	CAMERA READY
July 1989	April 30	Telecommunications Software for Microcomputers	April 16	April 16
June 1989	May 31	Word Processing Software and the Law	May 16	May 16
July 1989	June 30	Case Studies Computers and Social	June 16	June 16
August 1989	July 31	Networking	July 16	July 16
September 1989	August 31	Computer Training	August 16	August 17



Andrew Stein, 5783 Cedar Street, Vancouver, B.C., V6P 4E5.  
I greatly appreciate it. Thanks.

How about it readers, express those words in just the way you want!

## Re: VGA Monitors

I remember you're the chap who makes bold statements such as "there are many MS-DOS operating systems such as Dos/View, etc." In this month's paper, I noticed another:

"Remember that card (CGA) mainly to save you away from it."

I have always found the CGA card (with composite RCA ports) very useful for video computer VGA's. There doesn't seem to be anything else that can easily send video signals from a PC to your average monitor. I realize that it's tough to buy a CGA, as microscribe monitors in Canada (mostly bought in the States though). Your reader should be aware of this use and sale of CGA cards. If you know of any other video card that outputs to home VCR's, please tell me! Really thanks.  
Vancouver International Airport

## Grimbling Pays Off

We received the letter shortly after our publication and in just a few weeks with the article finally in print. Way to go Graham, someone was listening to us, now just extend the deadline a bit and everyone will have a chance to appreciate.

## Canadian Ready, Set, Go! Owners Upgrade to Design Studio for \$495.

Dear Ready, Set, Go! Owner:  
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Ernest W. Robinson  
Manager, Graphic Design Software  
Lattest Canada Ltd.

## SOFTWARE BC

### The Coming 2 Years

by Kimberly Bruck

Aftermarket was down at the last Soft were BC meeting due to the economy, but discussion was up because of the more informal group. Simon Atop, chair of PC Later, gave his predictions for personal computers in the coming years. According to Atop, Linux will not affect the market, and Microsoft Windows will be the new standard for DOS-based machines. As the industry moves into 1995, COTS version 2.0 will emerge. Sybase's distributed database structure will make it the new largest system database manager. Large applications will be converted to fit on cheaper machines (i.e., Office Vision from IBM), and the new marketing policy for Apple will be "secret code first."

Next month's meeting will feature Ron Evans, President of Evans Research. The meeting will be held at The Hastings Restaurant, 115-1022 Robson Street, on April 18, 1990.

Contact: Software BC, 673-3094

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## WHAT'S NEW

## LSD High Print Now Into Cyberspace

Thanks to Leary, the former Harvard professor described in the high points of the '80's acid movement, is now achieving his altered state in Cyberspace from a computer "Cyberspace" or "Virtual reality" uses sophisticated computer hardware and software to create a new artificial reality inside the computer. Leary was the subject of a recent interview on Vancouver radio station ROCK 1040's The Four 2000.

The term "cyberspace" was coined by

Vancouver author William Gibson in *Countdown*, a 1984 science-fiction novel that won the Hugo, Nebula and Philip K. Dick awards. The book describes a global computer/consciousness network supporting "conscious hallucinations" involving abilities people consider impossible. (*Sound a lot like Telethon... Ed.*)

The computer industry likes to call the concept "virtual reality" and leading edge software is being developed by Autodesk, the makers of AutoCAD, and the largest manufacturers of computer-aided design software. Virtual reality programs are being used by architects to

get a better idea of the design of buildings by turning them from inside a computer, by fighter pilots to gain experience in flight simulators, and by kids using the Nintendo "Duck-duck" game controller. Eventually, according to Leary, there will be computer users that allow users to "wear their computers."

According to the interview, Leary's motto for the 90's is "just say know," referring to his software company, Knowave (Suite 702-11283 Ventura Blvd., Studio City, California).

Leary spoke with Allen Kade, the host of ROCK 1040's The Four 2000 program. The show can be heard Sunday mornings, on AM 1040 radio.



## The Hissing of Office LARNS

"Look Ma, no cables!" is the approach of a new cableless local area network, the LARNS or Local Area Networks Network, made a significant advance in the way computers communicate with each other. Devices on the LARNS network are not linked by the usual tangle of cables, but rather by high frequency "spread spectrum" radio. Each unit requires a Coda 8070 LARNS unit and the LARNS software. The system works with up to 16 users who can be separated by a distance of up to 500 feet.

Distributed in Canada by Calcom Business Products (504) 381-6472.



## Project Managers Flipped Upside Down

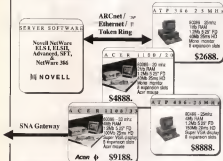
South Fraser Software of White Rock, B.C., has a new twist that they believe gives them an advantage over the 350-plus project management software programs on the market. Their recently announced software package, RFP/Resource & Project Manager, is a top-down, multi-project, multi-resource program. Most other project management software consists of single-project, detailed task network programs that use Critical Path Method (CPM) or Program Evaluation and Review Technique (PERT). RFP does not require users to learn either of these techniques, instead it uses a familiar spreadsheet-like interface to view both task network and scheduled-project resource allocation on a single Gantt/Resource screen. Project and resource conflicts are immediately visible and quickly resolved by moving employee allocation or changing project or phase start or end dates.

Other features include accurate resource availability scheduling, project percent complete, earned value, 180-day calendar, project status facility with internal work processes. Demo version \$495, full program is \$1795, with 90-day free software replacement option. Contact South Fraser Software, 5113 Southview Crescent, White Rock, B.C., V4A 6W9 (504) 550-2225.

## Simon Fraser Beefs Up Computer Theft Security

According to Simon Fraser Post, thefts worth over \$50,000 in the past nine months have prompted SFU to install a new security system on campus. The system, active and monitored 24 hours a day, instantly alerts the security office

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## Upgrades

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when a computer's on a temper (which can also trigger an alarm horn in the area where the tapping is occurring). According to Steve Mearns, electrical superintendent of facilities management, this system can accommodate over 1,000 wires.

## Dynasix Launches Two New Accounting Packages

Dynasix General Accounting Software and Dynasix Joint Venture Accounting Software are two new accounting packages announced by Accounting Software Associates of Calgary. Both packages run on IBM-PC and compatible computers. Both packages offer both single and multi-user accounting. The information accounting package features the ability to generate progressive time billings for capital, routine and operating costs. Contact ASA, 118-275 Midpark Way SE, Calgary, Alberta, T2X 3J6 (403) 253-8390.

## New Canadian Book on The Home Office

Local authors Douglas and Diana Gray, in association with McGraw-Hill Ryerson, have just published *Home Inc. — The Canadian Home-Based Business Guide*. The 316-page book offers a comprehensive look at setting up and running a home office in Canada. Topics covered include: self-assessment; selecting the right business; planning, legal, tax and financial considerations; low-cost advertising and promotion techniques; utilities and more management. Some interesting statistics from their book:

- The home-based business is the most rapidly growing small business trend in Canada
- Over 58% of small businesses start out of the home
- Recent studies indicate that by the year 2000, up to 40% of the labor force will be working out of the home. Some of these people will be employees (telecommuting), but most will be self-employed
- Attorney, Barbara Robinson, Halberts Carls, Hewlett-Packard, Nike and many other successful corporations in Canada and the USA started from home, in a basement, garage, den or spare bedroom
- Over 66% of home businesses are started by women
- Approximately 2/3 of home-based businesses must be in a return home-based or personal, not-for-profit, lifestyle choice. The other 1/3 want to move out of the home to save money, minimize risk and test the idea before expanding

**QuickMail 2.2 Upgrade Improves Features, Speed**

The new 2.2 version of the Macintosh E-Mail market is breaking up again with the release of CE Software's QuickMail version 2.2. The new version offers improved speed of access, better administration, and a variety of new features, including a QM Menu, which offers more, in which a mail menu to any application, providing universal mail integration. CE Software has also included a number of add-ons previously sold separately in the new package. QM-Builder allows QuickMail users to communicate with other QuickMail sites via a single MailCenter and a network. By adding FaxCenter's MacRecorder, users can add voice mail

capabilities. With the new features, QuickMail appears to be the product to beat. Contact: CE Software, Inc., 1854 Fuller Road, PO Box 65568, West Des Moines, Iowa 50325, 515/226-1965.



## Your Own Diskette Labels

Ever wonder where you can get professional-looking labels for your company's diskettes? Photocolor of Wilton, Ontario, is offering microcolor labels starting at \$50 for 500 labels. They are an economical way for software designers to market their "business label" software, or for you to put up on office disk labels. Contact: Photocolor, 6 Leaning Square, Suite 141, Millville, Ontario, J0 2T8 (416) 460-7900.

## Omission

Last month in our survey of desktop publishing service bureaus, we left out a new Vancouver company called Timewave's Graphics. They offer PC and Macintosh support with services on disk starting at \$9.00/hour, a Microtek scanner with OCR and 256 levels of gray for \$12.50/hour, disk readers from IBM to Mac and back for \$12.50 per disk up to 25 minutes. Laser printing on an Apple Laserwriter IIW from \$1.00/page, and a Monotype able processor from \$17.00/minute. Janis Gannon photocopying, Canon color laser copier, Kroy Kolor laserizing, binding, desktop publishing services, and systems advised and software package sales. They are located at 9815 Edgemont in Vancouver 604/455-8435, Fax: 604/455-8867.

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## NEWSBYTES

### Amiga

#### Commodore, Atari Battle Continues At European Show

MUNICH, WEST GERMANY, 1990 MAR 17 (NS) — At the CEBIT '90 show, Commodore and Atari will be on the continuing struggle between Amiga and Commodore for supremacy in the 32-bit game machine market.

Originally, industry watchers had expected Commodore to dominate Cebit with its new 32-bit Amiga 3200. However, Atari is now expected to dominate Cebit with its new 32-bit Atari 3200. Atari is now expected to dominate Cebit with its new 32-bit Atari 3200.

The official word from Commodore UK is that no new product will be shown at CEBIT '90. According to unconfirmed sources, Commodore is planning a new 32-bit Amiga, even though hardware was ready prior to Christmas last November.

Atari, meanwhile, is putting together a big show centering around a new range of the 77 and 486 series of desktop workstations and laptops. Atari is now expected to dominate Cebit with its new 32-bit Atari 3200.

Commodore may have the last word, however, as Commodore, the small West German system specialist, will unveil its range of Amiga products at CEBIT. The Amiga, which is now expected to dominate Cebit with its new 32-bit Atari 3200.

### Apple

#### Apple Gets Injunction In Canadian Gray-Market Case

MARGHAM, ONTARIO, CANADA, 1990 MAR 14 (NS) — Apple Computer has obtained an injunction preventing Megsoft, a Toronto computer dealer, from using Apple trademarks.

Apple had not against Megsoft in February and charged the dealer with infringing on Apple trademarks, posing its own Apple products as Apple products, and manufacturing its own software and hardware.

The injunction, granted by the Federal Court of Canada, prohibits Megsoft and its owner, Jacob Fine, from representing the company as Apple products, and from using or displaying Apple trademarks or marks likely to be confused with Apple trademarks. It also stops Megsoft from acquiring Apple products from authorized dealers, and from passing off non-Apple products as Apple products. Megsoft must also post a \$100,000 bond to ensure it complies with the injunction, said an attorney, stating it is not an Apple dealer.

Murray Vance, assistant legal counsel for Apple Canada, told Megsoft, has displayed logos closely resembling Apple trademarks, such as a rainbow-striped Apple with a bite out of its left side (Apple's trademark has the bite on the right). "They were at least creating the impression in the minds of consumers that they were an authorized dealer," he said.

Earlier, Fine told Newsbytes Apple's

allegations were "completely without foundation and have no basis in truth or fact."

Contact: Murray Vance or Norm Kirkpatrick, Apple Canada, 416-677-5500; Jacob Fine, Megsoft, 416-765-0077.



#### New Macintosh Roll-out

CUPERTINO, CALIFORNIA, U.S.A., 1990 MAR 12 (NS) — Apple Computer has chosen the highlight of the NIOSA (National Computer Graphics Association) convention to unveil its most powerful Macintosh computer.

Apple has scheduled a news conference and hardware for the press on March 16 at the Grand Hyatt Hotel, Anaheim, California, to unveil a Macintosh which has always been given the suffix SE, or SE/30. It's Apple's most powerful 68030-based workstation with a clock speed of 40 MHz, twice as fast as the Macintosh Plus. A variety of add-on cards, including one for SCSI (hard disk, external and non-putting) and a 32-bit card, and a new version of A/UX, Apple's Unix operating system, are also expected to be unveiled.

Two I/O units are expected to be made this year and new Macintosh, which will do some of the processing for the main CPU (central processing unit).

### Atari

#### Atari Finances Recovering, New Lynx, Portfolio Due

SUNNYVALE, CALIFORNIA, U.S.A., 1990 MAR 9 (NS) — Atari's fortunes are brighter now than they were one year ago as the company offers new versions of its long-proven hand-held game units, and its new supplies of the same are increasing.

Net income was \$5.7 million in the fourth quarter, compared to a loss of \$19 million during the same quarter last year. The company says income from continuing operations was \$5.8 million or 10 cents per share on sales of \$170 million for the quarter ended Dec. 31, 1989. The company's net income of \$5.8 million on sales of \$170 million for the

NEWSBYTES is written by Newsbytes Contributing Editors Wendy Woods, Wayne Vance, Dave Eisenberg, Jon Proctor, Steve Gold, Peter Vance, Ken Takahashi, Neophyte Yarnall, Paul Zucker, and Grant Budler. Newsbytes Canadian press releases can be sent to Grant Budler, CANADIAN BUREAU, 100 Kennedy Road, #202, Scarborough, Ontario, M1B 2B5-6644, Fax: (416) 299-5201.

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fourth quarter ended Dec. 31, 1988.

During the year as a whole, sales amounted to \$452.5 million, slightly down from 1989's \$452.2 million. Net income was \$4 million for the year as compared to a loss of \$84.8 million or \$5.6¢ per share for the year ended Dec. 31, 1988.

The company says the results reflect growth in Atari ST and Atari PC/M-100-compatible product lines, and in initial shipments of the new hard-held portable computer and Lynx handheld video games game set line.

The company attributes the total sales decline to slower sales of the traditional video game line, not the Lynx. And European markets were said to underperform all other markets in both computer and video game sales.

Sam Tramiel, president and chief executive officer, said in the press announcement, "The Atari 2088 was a transition year. It witnessed the introduction of a new generation of hard-held machines—the Lynx and Portfolio and, the disposition of an unexciting business segment. For 1989, Atari is fully committed to expanding market share in the video game sector with products like the Lynx, increasing our market share in the personal computer sector with products like the Atari STX, and maximizing our opportunity in the hard-held or portable computer business with Portfolio."

One obstacle to the way of maximizing opportunity in the video game arena is the slow production of Atari Lynx handheld video games sales. Greg Pratt, Atari spokesman, tells *Newsbytes* that supply is improving. "At this point we no longer have the same manufacturing constraints we had previously. We are confident that we will be able to have sufficient production capacity in place to accommodate next fall's selling season," says Greg Pratt, Atari's chief financial officer.

Atari won't disclose exact figures on the members shipped versus units sold ordered, but Pratt says the company is expected to sell nearly 1 million units by the end of the quarter, March 31.

The problems with the screens, which come from Japan's Citizen. While the unit was designed in the U.S., the Lynx case is manufactured by the giant Citicorp company in Japan. The computer Lynx units are then assembled in Japan and sold both there and in the U.S. The sluggish supply of the Lynx's unique screens are the reason for the trickling supply of the popular handheld game units. Atari expects supply to increase sufficiently by the second quarter of this year and, please to announce that the Lynx will be shipped to Europe, as well as the U.S. and Japan.

Atari will exhibit at the COMDEX computer show in Houston, Nov. 1989, this month. The company is expected to introduce new versions of the Portfolio and the Lynx which have bigger screens and larger memories. The price conference is on the list of March.

## Atari Lays Off 15 Per Cent Of U.S. Staff

SUNNYVALE, CALIFORNIA, 1990 MAR 17 (UPI) — *Newsbytes* has learned that Atari has reduced a major proportion of its Atari U.S. divisions in Sunnyvale, California, headquarters. Valued sales last *Newsbytes* that some 30 people, or 15 percent of the Atari U.S. staff, were laid off on Friday. Programmers were not affected, nor was production, which takes place in Taiwan. The

cut came among office, sales, and shipping workers.

August Lippman, Atari's vice president for international business, contacted at his home Saturday by *Newsbytes*, said that he had no exact numbers of people let go, but stated that the action was "more a diagnosis than a layoff," and that the move was designed to restructure the Atari U.S. division to "put the right people in the right places," for the 1990s.

He could not confirm a report filed by the 2088 news was service as *Globe*, stating that the layoffs badly hit the company's accounts division, with up to 50 percent staff losses. 2088 reports that some of the "impact" at Atari have been people working the support line.

"The fact that the support level employees were spared gives some reason to expect that this is not a long-term reduction in overall operations, but more an immediate action for an immediate situation," reports the news wire.

The bulk of the U.S. senior staff are currently on-site, *Newsbytes* understands, in Houston in West Germany, for the week's COMDEX '90 show.

## B.C. Bytes Vancouver's Lehigh Office MenuMaker

VANCOUVER, BRITISH COLUMBIA, CANADA, 1990 MAR 17 (UPI) — Lehigh Systems has introduced MenuMaker, a CD-ROM menu package for MS-DOS systems.

MenuMaker allows construction of menus in DOS users can execute programs, DOS commands and batch files by pressing a single key. It also includes a phone list and e-mail capability. Ragha Lehigh, president of the firm, told *Newsbytes* the software will be distributed through retailers and handled with hardware from several small PC vendors. The company is concentrating on the Canadian market at present, he added.

Lehigh also sells MiniText, a simple word processor, and the menu-oriented Lehigh Calculator. The company offers a bundle of all three programs for \$199. Lehigh said. Separately, Lehigh Calculator costs \$29.95 and MiniText costs \$24.95.

(Contact: Ragha Lehigh, Lehigh Systems, 604-679-3440)

## Business First Computerized Store Opens In Moscow

NEW YORK, NEW YORK, U.S.A., 1990 MAR 5 (UPI) — The first computerized store in the USSR, a Computerized Franchise, has opened in Moscow. Owned by Michael Teytens, a Soviet emigre and president of a New Jersey-based Computerized Franchise, the store, located near Moscow University, is stocked with equipment manufactured by IBM and other leading US companies.

The store has a policy of accepting only currency convertible to U.S. dollars. It is drawing its attention to Soviet business and institutions. A priced source quoted Mr. Teytens as saying "We expect to do a \$10 million business in the first year."

## Kaypro Files Chapter 11 — Says Move Is Strategic

SOLANA BEACH, CALIFORNIA, U.S.A., 1989 MAR 15 (UPI) — Hard on the heels of the announcement of the latest round of executive changes, including the appointment of a new president and CEO just two days after the introduction of a new 16-bit microcomputer, Kaypro has filed for creditor protection under Chapter 11 of the federal bankruptcy code.

In a statement issued by Kaypro, President and CEO Roy Salsbury is quoted as

saying "My team and I have been on the job for 18 days. During this time we've implemented a number of cost-cutting measures and have made every effort to actively Kaypro's patient creditors."

In the same statement, Salsbury said "We have devised a comprehensive strategic plan designed to put Kaypro back on track. We simply need more time to implement our course of action. We have chosen to exercise this option because it is a good business decision."

Salsbury has outlined several of the basic steps included in his strategic plan, including a change in the company's

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development channel, internal corporate restructuring, a careful analysis of Kypre's current position and an open approach to future opportunities for growth. Subsidary's plan has been reviewed and endorsed by Andrew Kay, Kypre's chairman of the board who commented that "this move will provide the environment necessary for Kypre to flourish again."

The very behind Kypre's rise and fall is a familiar one in the world of business, especially in young volatile businesses such as the computer industry. Large inventory purchases in anticipation of growth that didn't happen,

market softening, supply cost hikes as the necessary dynamic motion across (DRAM) chips, unfavorable financing arrangements, chips with unworkable defects and adverse publicity all contributed to the Chapter 11 decision.

## Canadian News

**Aperiot Secures \$2.25 Million Contract With Canadian Government**  
 BIRMINGHAM, ENGLAND, 1999 MAR 10 (NAB) — Aperiot has secured a US\$ 2.25-million (US\$ 21-million) contract

with the Canadian Ministry of Finance. The deal follows a 12-month evaluation of the UK company's products.

The contract is being administered locally in Canada by IBM, the country's largest systems integration house. The first phase of the contract calls for IBM to install 500 Aperiot P9/70 compatible machines linked over Token Ring networks to an Asynch mainframe.

According to Gerry Sautter, president of Aperiot in Canada (AIC) which supplied the PCs, the Aperiot Q systems consistently outperformed the competition in the extensive trial programme. "Q runs all the IBM operating systems

and applications without fault and faster than any other competitor. This, plus its integral security facilities, make it the logical P9/70 macro platform for what is regarded as Canada's most significant information technology project in many years," he said.

Contact: Jon Davis, Aperiot Computers (UK) — Tel: 091-456-6394

## CD-ROM

### CD-ROM Expo: Trends

SAN FRANCISCO, CALIFORNIA, U.S.A., 2090 FEB 28 (NAB) — The large audience for the Cahners Exposition Group's Fifth Annual CD-ROM Conference and Expo, held Feb 27-Mar 1 at the San Francisco Hilton, overshadowed show organizers this year. They were forced to limit the number of seats in conference sessions and the number of free passes issued to members of the press.

The star of the show is CD-ROM, or compact disk, read-only memory, a disk that can hold an enormous amount of data compared to conventional floppy or hard disk media.

The new medium has long interested Microsoft, which hosts a show of its own and has a division dedicated to CD-ROM development. Kypre speaker Bill Gates, chief executive of Microsoft, told the crowd that CD-ROM is the secret to multimedia — the ability to tie together sources of video and audio and data into a single presentation. Such applications are becoming large, and CD-ROM is the only way to store the information in an economical manner. One CD-ROM disk holds 600 megabytes of data. Gates predicted that once the cost of CD-ROM players for computers drops below the \$400 mark ("I feel confident we will do that in the next year," he said), more of the professionals will be sold.

On display was a new mastering system for assembly of CD-ROM disks, from data preparation to data retrieval software, to finished disk. Priced at less than \$18,000, the Morisette Data VCR Publisher (VR stands for Virtual VCR) has a 600 megabyte hard disk drive, as well as 1.2 gigabytes of digital audio tape drive and assembler software.

Lecturers were being swapped like baseball cards. The biggest winner appeared to be Knowledgebase, the Mountain View, California-based company started by Digital Research founder Gary Kildall. Knowledgebase has signed a license the IBM to use its Knowledgebase System technology as an AIK (User interface, also called shells) system. This will be the preferred engine for CD-ROM-based applications run on IBM's new RISC System/6000 family of workstations.

Knowledgebase also announced that Apple Computer has licensed HyperCard, its full-text retrieval engine for Hypercard stacks. Apple will include HyperCard as a core development tool as reference materials, product info, and technical documentation.

Apple Computer also announced it is licensing Personal Library, from Personal Library Software of Rockville, MD, for use in-house as Apple's full-text information management system.

Third-party applications, or software on CD-ROM disk, abounded. Among the highlights: METACOSM SOFTWARE, Chicago, Illinois, announced that it will make its encyclopedia an CD-ROM format available exclusively for Red Hat's Turbify

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pay that could add up to be little more than \$2,000 — that's \$1,000 less than most Postscript printers, and an aggressive entry into the PostScript laser printer market.

The new printer, says HP, offers cleaner print quality and the ability to print fonts in any type size without "jagging" or distortion, a technique called "font scaling."

The monochrome, containing a Postscript interpreter and 32 scalable Adobe fonts, will be available April 1, 1988, worldwide from HP authorized dealers and HP's direct sales force.

Postscript is a computer language that describes the layout of a page to an output device, in this case, to HP LaserJet

printers. The industry-standard Postscript language is generally seen as disadvantageously improving the effectiveness and the appearance of printed documents.

### Adobe Fonts Chosen For IBM SAA Standards

BOSTON, MASSACHUSETTS, U.S.A. IBM HAS (NS) — IBM has announced that it intends to provide Adobe Systems Incorporated's technology across the various of its Systems Application Architecture (SAA) compliant operating systems. SAA compliant operating systems include Operating System/2 (OS/2), Operating System/400 (OS/400), Vir-

tual Machine (VM) and Multiple Virtual Storage (MVS).

Word of IBM's intent to ship the Adobe Font Technology with an OS/2 product came somewhat as a surprise to many industry watchers and is justified by security analysis as the reason for the increase in Adobe's stock price on Monday. Another report based on the IBM announcement claimed that Steven Lehman Horton Inc. has raised its earnings estimates for Adobe.

Much of the surprise comes from the fact that IBM had previously announced plans to ship the Rapid River technology, developed by Apple Computer and Microsoft, with its version of OS/2. a

move that appeared to close the door on Adobe's chances for inclusion with the product. This open font initiative supported by OS/2 allows the support of multiple font technologies and will, therefore, provide users with their choice at font technologies.

IBM's implementation of Adobe font technology for SAA operating systems will be compatible with the previously announced implementation of Adobe's Display Postscript system for its Unisys-based AIX operating system.

In a related development, Microsoft has announced that it will provide the Royal technology, which it has named TrueType, as subsequent releases of Microsoft Windows and OS/2 Presentation Manager. It also announced that its page-description language, announced in September 1987, will be called Microsoft TrueType.

(Contact: Tracy O'Neill, IBM, 914-645-5432)

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### Local Area Networks

#### Network Courier for OS/2 Now Shipping

VANCOUVER, BRITISH COLUMBIA, 1980 FEB 22 (NS) — Computer Software has begun shipping Network Courier for OS/2, discontinued at the NetWorld show early in February.

The OS/2 version joins Comshare's DOS, Macintosh and Microsoft Windows versions of its electronic mail software. The OS/2 component is priced at US\$199 per network. It will run on any version of OS/2 and can support as many as 150 users on the same network.

Network Courier for OS/2 also allows access to gateways to outside mail systems, including MCI Mail, IBM's mainframe-based PROCS mail system, X.400 systems and facsimile transmission Network Courier is a self-administered capabilities for users and delivers files to send the same message to distribution lists including users of Network Courier and other mail systems, Comshare said.

The current OS/2 Network Courier does not support Presentation Manager, but company spokesman Michael Shandrick told *Newsday* earlier that the company plans PM support.

(Contact: Michael Shandrick, Comshare Software, 604-685-4546)

### Telecomm

#### NSA Said To Oppose Soviet Fiber Optic Cable Plan

NEWTON, NEW YORK, U.S.A., 1980 MAR 16 (NS) — Strong opposition is coming from the National Security Agency to a plan by a consortium of U.S. communications companies to aid the Soviet Union in installing a nationwide fiber optic communications system, according to an article in *Thursday's Washington Post*.

The dispute, viewed as a major test of the present knowledge of U.S. relations to sales of high technology items to the Soviet Union, is said to center around an ongoing intelligence counterintelligence activity by the United States intelligence services on Soviet radio and television networks. It is felt that the introduction of fiber optic communications circuits by the U.S. consortium, led by the Decatur-based US West Inc., will make the Soviet communications secure and, thus, en-



der's U.S. multi-billion-dollar investment in sophisticated wiretapping into fibre-optic stations.

The writer of the *Washington Post* report, Mark Etkenshaw, also says that the dispute further points out the way in which technological innovation is rapidly outstripping the ability of the world's intelligence agencies to keep pace.

US West, one of the "Baby Bells" regional phone companies set up following the re-nationalized breakup of American Telephone & Telegraph Co., reportedly obtained permission in June to try to build a fibre-optic telephone line across the Soviet Union and has arranged agreements with phone companies in Britain, Japan, Italy, Australia, Denmark and West Germany to participate in the project. It was this request that initiated the current controversy.

While spokesmen for the NSA and Defense Secretary Richard Cheney would not comment on the controversy, the *Post* article quotes a former Pentagon official, Frank Gaffney, who now runs the Center for Security Policy, a conservative think tank, as saying, "A Soviet electronic network will... make it infinitely more difficult for the West to monitor Soviet communications, a decisive factor ensuring leadership superiority, status of forces and preparations for conflict."

Ed Martin, US West's public relations director for international matters, told *Newsbytes* that while "there's no question that there is more difficult to tap into, most of the technology available elsewhere in the world and in two or three governments old. It is certainly available in the Soviet Union from other sources."

He pointed out that the proposed link will benefit not only the Soviet Union but will also dramatically increase telephone and data transmission capacity between Western Europe and companies of the Pacific Rim, particularly Japan.

The advent of the European single market in 1992 and the greatly expanded world market presence of Pacific Rim companies require greatly improved communications systems and the proposed fibre-optic system is a step in that direction. Martin also told *Newsbytes* that, although The *Post* article mentions US West's telecommunications deal part of the US government opposes the project, he is only aware of opposition expressed by Richard Preble, a former government official, who testified before the House of Representatives Foreign Affairs Committee on January 25th of this year.

## Stratford Delays Suzy Again

**BURNABY, BRITISH COLUMBIA, CANADA, 1988 RELEASE (NY)**—Software developer plans to test four new versions of testing before launching Suzy, an online information system.

The service, consisting of a database system and accompanying software to run on users' personal computers, was originally to have been available in December of last year. That date has since changed to February. Now the second date has slipped. Sharda Chhabra, marketing manager, told *Newsbytes* the company is confident Suzy will be ready for early April.

The product is a field testing, Chhabra said, and there are no serious problems. Having built a solid reputation for its accounting products such as Stratford Software, Stratford is "trying to maintain that sort of credibility in the marketplace

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by not making something that isn't perfect," she added. Novell sold its networking products, along with the Redford name, to Computer Associates last July. That sale also means Novell had not had to rush her out the door for the sake of cash flow, Chrobot said.

Contact Terry McDonald, San Jose, between, 808-459-4331.

## Trends

**Senior Execs Must Change How They Relate To Information, Says Drucker**  
RANCHO LAS PALMAS, CALIFORNIA

NIA, U.S.A., 1990 MAR 15 (NS) — In the keynote speech at the Arthur D. Little Information-Based Organization Conference, noted business expert Peter Drucker told senior executives in information-based organizations that they will have to change the way they relate to "information."

Drucker did not say that such executives should become information specialists. Rather, he suggested they need to ask four questions and think through the answers carefully. The four questions are: What information do I need for my job and how do I get it? Who needs information from me and in what form? What does each member of the

organization need to know in order to be as efficient as I am? And, What do I need to know about the objectives and work of key people in the organization and how do I get them to accept responsibility for keeping me informed?

Drucker contended that today, most people in companies are neither creators and information waits to be used without more than actually used. In a new information-based organization (IBO), people must not only take responsibility for gathering the information they need but must also be cognizant of the information they must provide for others. Drucker defined information as "the right knowledge to take

effective action" while he defined data as "one aspect of information."

"We are beginning to go into the information age instead of the data processing age" and pointed out that information can come from all levels of the shop floor, customer interface and data such as that found in spreadsheets.

Three factors make the movement of the 1990's effective were stressed by Drucker. He noted that we are moving into the IBO with deliberate speed. People have to learn that information is important. The second factor he mentioned was that a great majority of institutions need to act in contemplation of global competition in a fast-changing world. His third factor was that people will have to take increasing responsibility for their own contribution and their business environment will not be static.

As a result, Drucker forecast that information executives in the IBOs of the 1990's will have to manage and refine their businesses and design systems to use information intelligently. They will need to track information spreadsheets and share it; they will have to realize they are running a virtual "stock" of capital resources—not capital equipment.

(Contact Jennifer Kameny, Publisher/Editor Communications, 313-478-0901)

## Intel Promises

### Flash Notebook:

#### 56 MB Laptop By Year 2000

SANTA CLARA, CALIFORNIA, U.S.A., 1990 MAR 9 (NS) — Intel's Dick Fadden, general manager of the firm's Flash Memory Operation, also the senior general manager of the memory components division, shared his vision of the company for the year 2000 with reporters and analysts this week.

During a press tour of the Intel's new "DI" site, also known as the Manufacturing Research and Development Site, Fadden said that by the year 2000, the most popular computer on the market would be what he's coined "The Flash Notebook," a half-pound, one-half-inch thick, 700-ounce palm-top machine. The computer would have a built-in modem, fax machine, cellular telephone and vibrator. Delivered would be 50 megabytes of "flash" memory and a 500-hour rechargeable battery. All of this would be priced at the equivalent of \$200 in today's dollars.

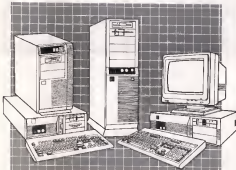
Intel's Manufacturing Research and Development Site, where he made his comments, may be where the basic components of the vision could ultimately be made. The \$100 million facility due to be completed in April, 1991, will be devoted to advanced manufacturing processes focused on nonvolatile memory devices and microcontrollers.

Inside a class-one clean room totaling 35,000 square feet, Intel says no more than 35 microns (right one-thousandth of an inch) of particles will constitute a single cubic foot of air, a confidence thousands of times cleaner than a hospital operating room.

The cleanliness is accomplished by having western wear "bunny suits" that fully enclose their bodies, much as astronauts space suits. The fabrication floor is also designed to prevent a hair or flake of dirt from the ceiling to the floor. The air is filtered and recycled ten times a minute.

Intel Chairman Gordon Moore says of the facility, "This will be one of the most

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advanced architecture development facilities in the world."

(Contact: Pam Pollock, Intel, 608-967-6729)

## Unix

### RISC/6000 Faster Than Supercomputer

LIVERMORE, CALIFORNIA, U.S.A., 1990 MAR 15 (UPI) — An independent study performed at the Lawrence Livermore National Laboratory in California has shown the new IBM RISC/6000 model 530 workstation capable of performing certain calculations faster than a Cray Model 3/MP 4/16.

A study performed by researchers Eugene Brodie as part of a study called the Massively Parallel Computing Initiative, judged the 3301 workstation against the Cray as a standard of reference. The test called the Monte Carlo calculation transport benchmark test. Brodie's results showed that the RISC system was the test 10 percent faster than the Cray, and a packet-switched network interface ran 50 percent faster.

Lawrence Livermore spokesman Steve Wampler said the results of the test show that certain supercomputer in the 3301 system run faster than those made a Cray or other supercomputer. For instance, he said, some leading supercomputers use new machine code faster than supercomputer processors. Such codes are those codes for which low-level operations cannot be performed as sequences, in a manner similar to a craftsman producing one piece at a time. Supercomputers, however, are available

times faster than microprocessors in running complex, lengthy calculations called vector processing, although the difference is expected to narrow in the next five years, according to Brodie.

Lawrence Livermore's Massively Parallel Computing Initiative (MPCI), in which 130 microprocessors will work in tandem in an IBM Advanced Computers TC 8008 computer, will compare the benefits of parallel computing. The lab's decision to investigate massively parallel computing was fuelled by several industry advances in the past four years making more and more computing power microprocessor chips for personal computers and workstations.

During that period, the compute power of microprocessors doubled nearly every year, allowing them to rapidly catch the computational gap with supercomputer processors.

(Contact: Steve Wampler, 415-425-4506)

### Motorola Launches New Computer Line

NEW YORK, U.S.A., 1990 MAR (UPI) — Motorola has introduced a new line of RISC-based computers to directly challenge those recently introduced by IBM. The computers, called the MultiPersonal Computer (or MPC) series, are based on Motorola's new 68000 reduced instruction set computing (RISC) microprocessor and are available in three models. The MPC-100, which contains a 20MHz processor at \$29,995; the MPC-200, with a 25MHz processor costs \$39,995; and the MPC-300, which contains a 33MHz processor, is priced at \$39,995.

## The Computer Paper / April '90 19

Each model will be equipped with a minimum of three Motorola Network Display Stations, a configuration that Motorola representatives point out makes the cost of the MPC-100 come out to \$7395 per user at its minimum configuration.

Motorola has adapted the Unix operating system and OS/2 Multi a window manager developed by the Open Software Foundation, as part of the standard software to be used with the system. Also provided with the system is X Windows, a graphical environment developed by the Massachusetts Institute of Technology. Looking Glass, a desktop manager from View Software of Reston, VA and Ektrast, a local area network standard. The version of Unix used is System V R4, an implementation by Motorola of the industry standard Unix System V Release 3 operating system.

In announcing the new system, Edward J. Stulman, president and general manager of Motorola's General Systems Section, stressed the choice of industry standard software. "The MultiPersonal Computer is the most open computer system available today. We are offering a computer built with open-processor hardware and software that is extremely competitive in terms of performance, price and quality."

Motorola also includes with the package software called SOLPC, an emulator that allows applications written for the industry standard MS-DOS operating system to run without modification at speeds which Motorola states are comparable to an Intel 80286-based PC, running the same applications.

To illustrate its competitiveness in price and performance, Motorola stated

that its MPC-100 can deliver per MIP of processing power while the recently introduced IBM PowerServer 330 costs \$1,725 per MIP, the Sun SPARCserver One \$2,685 per MIP and the Digital Equipment DECsystem 5100, \$2355.

The initial industry reaction to the Motorola announcement was generally positive. Bruce Forrester, managing director of Forrester Research, Forrester Associates said New York: "Although it appears that Motorola has done a first technical job, it's difficult to see this market to get excited about new hardware announcements. The success of the product will be determined by Motorola's marketing ability."

David Brown, executive analyst with New Japan Securities Co. Inc., was quoted by United Press International as having similar sentiments. "I think it's a significant development in the extent that they are trying to highly advertise the fact that they do have a computer division, with low-cost, high-technology products, and how this can be capitalized in the personal computer market. The competition is quite intense and it may be difficult for them at the beginning because it is a new area and the market is sluggish."

The MultiPersonal Computers are expected to be ready for shipment in May 1990 and will be marketed both by Motorola directly and through value-added resellers.



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## WORKSTATIONS

# WORK STATIONS

The workstation of today far surpasses the S-M specifications of January Academic Month. Indeed, most workstations are approaching mainstream systems. While this class of computer has been well-known in science, engineering and medicine for about a decade, little is known about business applications.

By William P. Barr

Did you know, in a long-lost land called Academe, there lived a mystical group of people called Professors. They lived on a pair of isolated islands called Computer and Engineering. Like modern Greeks, they possessed tremendous natural resources, but lacked the processing technology to make use of their resources. One day, a group of these mystics underwent a strange trial and wrote a contract paper. Shortly thereafter, they went to the temple of Computing Services to seek guidance. After much deliberation, the high Priests, chief officers of the Data & I of Computing, interpreted the paper. They determined that Academe needed a machine called the S-M. A machine that possessed 1 MByte of RAM, 1 MPTS and 1 MWord would make their processing problems, she predicted. With paper in hand, the high priests, Academe, asked for their golden coin. After the last priest had given up the last of his gold, the high priests, Academe, asked for their golden coin. After the last priest had given up the last of his gold, the high priests, Academe, asked for their golden coin. After the last priest had given up the last of his gold, the high priests, Academe, asked for their golden coin.

ACADEME and her personal guard of Ours, rode down on mighty Ours to deliver the S-M machine. And in, it was called a workstation. It is an instant, a modern speed and the problem solved. This act Academe witnessing what to do next.

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See's SPARCStation is a leader of the workstation pack.

In this article, I want to give a broad outline of how workstations could fit into a corporate environment.

## Defining A Workstation

As the name implies, a workstation does more than a personal computer. A PC was designed to do one thing: to make a certain amount of money. True, you can purchase all the components needed to make a PC seem like a workstation, but that would end up costing the same amount of money anyway. Even so, a workstation PC still doesn't have the overall performance of a workstation, nor will the components be optimally configured. By analogy, you are trying to shoot a shotgun through a hole in a VW bug so you can see an RV; you really ought to buy a truck.

A workstation is designed to be more than a "power PC". Both the user interface and applications software for workstations are very graphically oriented. To handle the tremendous amount of video information, both CPU power and I/O throughput are key design features. They are also meant to be used on networks so that resources (faster printers, backup facilities, etc.) can be shared, or processing can be distributed to other machines. Finally, they must allow multiple programs to run simultaneously.

To accomplish these tasks, most workstations come with a set of standard equipment not found on a PC. This list includes: a multi-tasking operating system (usually Unix), business network support and an Ethernet card, a powerful graphics user interface (GUI), a high-speed bus architecture to move data in and out of memory quickly, a math co-processor, big memory caches to speed up video, CPU and disk throughput, huge high-resolution monitors (usually 15" or larger) and lots of memory capacity (most machines can hold 64 Mbytes or more). All of these parts are designed to work together smoothly. Very simply stated, a workstation is designed to be used by one person at a time to do several things at once while sharing resources on a network.

## PCs Just Don't Cut It

Most of the manufacturers now regard the workstation as a commodity item and their marketing plans reflect this. Apple and NeXT have been the

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distance quickly demonstrates to that class "Oh, Yeah!" "Yeah!" is the memory keyword here. As far as the issue is concerned, there is no perceivable difference (except with the GUI). There are literally thousands of software packages available for each type of Unix. To make the standards debate even more absurd, most of the popular applications are available for both flavors of Unix. IBM and Charlatan will probably reconcile their differences over Jerusalem before the Unix war ends. I advise my clients not to worry about which side to choose in the Unix debate. Find the software that does the job best, and they'll get you that. Besides, if software portability is truly important, you ensure the software is written in a portable language like C or a fourth generation language.

### Applications!

Since workstation users with powerful GUI's, the user doesn't have to navigate through the labyrinth of the ugly Unix command line. Good news: users agree that no more manuals should be shuffled from mainframe Unix. The presence of a GUI means that you spend more learning the application instead of learning Unix. This is fortunate because there are codes of applications software. Since workstations are popular in science and engineering, one would expect a myriad of CAD and imaging software. In this regard, you won't be disappointed. In business, the workstation is a common office fixture (yet) and little is known about what software is available. Of course, the standard databases, spreadsheets, accounting systems and word processors are available. Additionally, there are

massive graphics, communications and vertical market applications on the market. In the universe of Unix, I will share over the following is a list of workstation software publishing, from database management, and executive/financial support systems (E/FMS).

### Publishing

To begin with, let me say that anything you can do on an IBM/3085 clone/Amiga/Mac can be done on a workstation. That's about where the similarity ends. Workstations can do the job a lot faster and the flexibility in the software packages is astounding. There are also a lot of programs on the market that they all do it better, better and faster than their PC clones. Software packages vary in complexity and ease of use. On the one hand, a T&E, which requires one to be a programmer to use it effectively.

As for other extreme packages like Interleaf (combining layout with word processing and spellchecker) or FrameMaker, which features user-friendly interfaces.

Most publishing packages on workstations arose from the need for the academic/industrial community to publish technical documents in many remote formats. As a result, most packages can manipulate technical documents and mathematical symbols easily. I can't go into depth with each package, but I will provide you with some highlights. I have used only four publishing packages (there must be over 50) on a workstation. These include Interleaf TFS (Interleaf, Inc.), The Publisher (Aldus Text, Inc.), Book Publisher (MacMillan) and FrameMaker (Frame Technology Corp.). Interleaf is an overwhelming package; you can do everything but CAD in the



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## Workstation Price Comparison

### NeXT Basic System: US\$3,995

Motorola 68030 processor, 2 MB RAM, 17" MegaPixel Display, Motorola 56001  
DSP Keyboard & Mouse, 250 megabyte optical drive, Ethernet Multi User OS,  
3 expansion slots, 105 ball hard drive US\$2,160 (NeXT built-in software \$835)

### Mac IIcx Basic System: US\$7,552

Motorola 68030 processor, 4 MB RAM, 50 MB hard drive, Mouse, HyperCard,  
A/LX OS, 3 expansion slots, Prism 250 MB hard drive US\$2,495, 4 MB RAM  
US\$550, Ethernet (optional US\$400), 16Pin LaserView mono monitor card US\$2,405,  
La Cie 500 MB optical drive US\$1,395, Keyboard US\$205

### IBM PS/2 60 Basic System: US\$9,227

Intel 80386 processor, 2 MB RAM, 214 MB hard drive, Keyboard, 4 expansion  
slots, ADX OS US\$995, 6 MB RAM US\$2,166 Ethernet card US\$505, 17" IBM  
6514 monitor & card US\$2,275, Storage (Dimensions 528/590 MB optical drive  
US\$8,515)

### SUN SPARCstation 1 Basic System: US\$8,995

Basic system: SPARC RISC processor, 8 MB RAM, 17" mono monitor,  
Keyboard & Mouse, Ethernet User OS, 3 expansion slots, 327 MB SCSI hard  
drive US\$5,495, Delta Microsystems 800 MB optical drive US\$7,300

### Total system costs:

NeXT	US\$13,695
MacIIcx	US\$20,351
IBM PS/2 60	US\$24,835
SUN SPARCstation 1	US\$22,495

WB I didn't include MIPS ratings because they are useless. Here is an  
example: LDC has an IBM 3091 K mainframe. It runs the VM, AIX and MIPS  
operating systems simultaneously. It easily handles 40 users doing compila-  
tional intensive tasks (lots of math). It runs at a mere 12 MIPS. A 27 MIPS  
workstation trying to do the same thing could die. MIPS are meaningless—  
throughput is what counts.

system. Their customers are impatient, and so are the capabilities of the pro-  
gram.

There are three modules (basic, book  
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so you only have to buy what you need.  
Book Publisher is great for small pub-  
lishing houses. This package will allow  
revision easily, manage design, and typeset.  
It also includes the business side of  
publishing: order processing, sales analy-  
sis, copy comments and contract man-  
agement. Revision pages can also be  
inserted without retypesetting. Future-  
Market is available in addition to making  
easy to use, it's cheap. It has a good  
interface that you can customize, and  
because it uses Display Postscript, screen  
output is excellent on a NeXT cube (I  
understand something to the tune of 30  
IPS, or so).

There's TIB, "Technology" publishing  
package for workstations. The Publisher  
is great for technical communication, and  
it is also expensive. It runs the power-  
ful TeX language, developed by Donald  
Knuth for typesetting and composition  
purposes. The nice feature of this package  
is its flexibility. In addition to making  
use of all the TeX-based publishing  
programs, I have also seen DocPro  
Professional Publishing Software (Docu-  
pro, Inc.) in action. The advertisement  
took a wonder of one text and graphics,  
opened a window containing a pre-format-  
ted manuscript, and the raw text was  
automatically formatted. I was impressed.  
I am also familiar with the capabilities of  
Veritas and PageMaker on PC platforms.  
After using a workstation for electronic  
publishing, I wondered how people could  
work without them. For those of you who  
are dissatisfied with the lack of power or  
functionality of your PC-based desktop

publishing operation, a workstation-based  
solution may be worth looking  
into.

## Playing The Stock Market

There may seem like a silly thing to do  
a Vancouver company, but it's not. Out  
of all the financial/stock analysis pro-  
grams I have seen, OMN II (Microcom  
Development Corporation) deserves an  
A+ grade award. Any serious investor or  
stockholder will want to give this pro-  
gram serious consideration. Like most  
packages, it can monitor portfolios (with  
limit orders) based on a ticker feed,  
track a news feed, perform technical  
analysis, draw a custom chart, and not  
manage a customer base simultaneously.  
What makes this program the cat's paw  
has is the presentation of the package.

Securities analysis, investment bank-  
ers, brokerage and portfolio managers have  
seen a lot of workstation-based applica-  
tions. These packages range from  
Barron's Exchange Information System to  
expert systems that help manage risk in  
large portfolios. And you see the "highly  
leveraged" people (pardon the pun) who  
could benefit from a workstation on your  
desk. There are several real-time portfolio  
management systems, like GWIN II,  
for brokers and traders. With a worksta-  
tion, unlike current trends, several  
windows can be open at once, which  
eliminates the need for switching be-  
tween screens all the time. For invest-  
ment bankers and corporate money  
managers, there are software tools for  
foreign exchange trading management,  
multi-currency portfolio management,  
multi-currency systems, and complete  
accountant banking support packages.

For analysts, there are many statistical  
and charting tools available. There are



also knowledge of several systems. These functions facilitate the research necessary to find the program exactly what data relationships you are looking for, and it will search a vast amount to find them.

The financial industry is a natural home for a workstation. There are more than enough powerful software packages designed to make you more effective at your job. Invest some time investigating what is available and you just might find that edge you need.

### Executive Support Systems

Executive/Decision Support Systems are something you can't go to for a low price at a show at the near future. Generally, they seem to be nothing more than an SQL database that put data into a spreadsheet (it can which pretty pictures afterwards). That's nothing new. I prefer a description I overheard at the recent Com show. "It's nothing but an electronic dog-and-a-cat game." Most of these products are still as badly designed, as I can't give any guarantees.

But if you give me a minute, I'll just point up my crystal ball. The front end of an EDS would have a knowledge

retrieval system. You could type in something like, "Read all articles about EDS in magazines between 1987-1990 with Canadian information" and the requested information would come from a data base. Next, you could put numerical information into a spreadsheet and do a couple of "what if" scenarios. If you wanted to, you could make a graph, and when you had the numbers and watch the graph change, or play with the graph and watch the numbers change. Once you were happy with a few different scenarios, you could send it to the experts for a review. Or, you could give the problem to an AI (artificial intelligence) application to figure out the technical analysis (forecasting, ROI, risk factor, etc.) in a few minutes. After seeing the results, you could go with your gut feeling and choose the expert you feel is comfortable with. That's how I see EDS working over the next few years. Another, that is how I would like to see it work.

William Barz is a senior partner in the Vancouver-based management consulting firm of Barz, McCreath & Associates, which specializes in search analysis and system architecture.

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7	11,387	11,307	37	38,221	38,161
8	12,287	12,080	38	39,421	39,361
9	13,158	12,130	39	40,712	40,652
10	17,387	16,490	40	41,880	41,820
11	18,967	18,794	41	43,082	43,022
12	18,886	21,104	42	44,282	44,222
13	21,810	22,455	43	45,504	45,444
14	22,242	23,757	44	46,747	46,687
15	23,423	24,819	45	47,822	47,762
16	24,674	26,430	46	49,152	49,092
17	25,854	27,721	47	50,508	50,448
18	27,156	29,800	48	51,848	51,788
19	28,287	30,374	49	53,240	53,180
20	29,279	31,635	49	53,492	53,432
21	30,727	33,375	41	55,152	55,092
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### FILE SERVER CONFIGURATION:

MT286-12MHz D W S, 2MB, 1 3MB floppy, 40MB 28pin Harddisk, Monochrome Display, Enhanced Keyboard, 2 Parallel & 1 Serial Ports, Arcnet Card, Novell Network Operating System, File Servers under 8 users are installed as MDN-DEDICATED File server.

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by Andy Green

### Prevention

An ounce of prevention is worth a pound of cure. The best way to keep your computer from breaking down is to buy a good-quality computer in the first place. Budget-business machines are no bargain. Besides the repair bills, you must contend with lost data, lost time, and lost use of your computer while it sits at the repair shop.

How do you shop for a good-quality computer? I suggest looking through back issues of the *The Computer Paper*. Almost every issue contains relevant articles. I have collected the unaltered versions of all my articles on two disks. For \$5 each, I will mail them to you anywhere in the world. Check 22! You need some to a working computer to read them.

### Hardware Tune-Up

Preventive maintenance is the happy name for a hardware tune-up. You pay someone about \$100 to do what a good fender would have done in the first place when you bought your machine.

A hardware tune-up includes such things as testing all parts of the computer to make sure they are functioning normally, cleaning and testing all contacts, ensuring all DIP switches, terminating resistors and jumpers are set correctly, erasing the low-level format with the proper formatting parameter, scanning the disk to search for tiny flaws ensuring the floppy disk drives are properly aligned and adjusted correctly, labeling all cables and connectors inside and out. In addition, for older machines, a tune-up would include cleaning out all the dust and taking the keyboard apart and cleaning it.

### Professional Repairs

While your computer is under warranty, you can take it back to the dealer who sold it to you. It has problems to fix it, parts and labor. Once the warranty period is over, you can continue to take it back to him, but then you will have to pay.

There are companies that specialize in repairing computers. The two best known Vancouver companies are the Xerox Service Center, 668-2380, and The Computer Clinic, 292-4414.

You can take your broken computer to Xerox and they will fix it for \$68 an hour labour, plus parts. They have 15 technicians on staff and they can usually repair your machine within eight hours. The Computer Clinic charges \$75 per hour. Other smaller companies charge

will fix.

Steve Barham, the technical coordinator for Xerox, points Xerox's premium rates this way. Xerox insists its repairmen visit and repairs them with advanced diagnostic equipment (such as the Fixtron analyzer which can automatically diagnose boards right down to the chip level, if they get stuck, they can immediately look on higher-level support info.) If a repairman is a small shop in a suburb, he has no (cheap) but to use in-house tools, and charge you for the extra time it takes.

It makes sense to use those big guns for complex repairs (especially LANs), and smaller shops for simpler repairs (e.g., replacing a floppy drive).

## Service Contract

Rance has it first, in China, physicians only get paid if they keep their patients well. Here in Canada we have a similar system called Service Contracts. For example, The Computer Clinic will keep your SX machine running for one year if you give them \$500 at the start of the year. They will not change you any software, but they will change you what-so-ever the any needed replacement parts. Walker Anderson of The Computer Clinic explained their cover "on site" to your office inside the repair service department. They will also visit twice in the year to check out your computer and clean it.

Xerox, too, offers a bi-annual-to-tri-annual contract — for \$650 a year — is a great contract (where you must bring the computer in) for \$500. If you contract for 100 machines, Xerox will give you a 20% discount.

The advantages of service contracts are:

1. It lets you relax, knowing your important documents are protected out of hand so matter how much of a lesson your machine was in.
2. It gives added assurance to the repairman to do the repair properly. If he were to fix a floppy job, he would just have to spend more of his time later doing it over. Without a service contract, you pay twice when the repairman does a shoddy job.

The disadvantages of service contracts are:

1. There is pressure to do the repairs as quickly as possible. When the repairman has the option of taking an extra 15 minutes to repair an expensive part or replace it with a new one, he might be tempted to replace it.

2. Computers suffer primarily from infrequent availability. Most problems show up in the first few months of use. Once they get through the first few months period, a good-quality computer will probably go four years without further trouble. Then in old age, mechanical parts such as floppy drives and hard disks start to fail. Most of the time, if you have a service contract on an "indefinite" computer, you will likely be waiving your money since it will probably not need many repairs.

Think of a service contract as an insurance policy. You may want not just to cover yourself on the off chance your sophisticated computer needs costly repairs. Think of a service contract as your insurance payments for your generic or generic computer.

## The Computer Probably Is Not Broken

When your computer is not working, first by turning it off, waiting ten sec-

onds, then turning it on again. This will usually clear software-related problems.

Check all the on/off switches. You may be so used to leaving your computer on all the time, you may have forgotten that some switches even exist. Test the wall outlet with a lamp to make sure your computer is getting power.

A computer will appear to be broken when somebody has messed with the monitor brightness or contrast knobs. The keyboard will not work if some child has flipped the switch on its underside. Screen driver software can make it look as if the monitor has died.

## Emergency Repairs

In 50% of all computer problems, NOTHING at all happens. All the little electronic chips are functioning away perfectly. The problem is simply loose or dirty contacts. Contacts are any places where electricity has to flow across a junction where two metal pieces have joined, such as where a cable plugs into a socket.

The main troublesome mechanical contacts are between the controller boards (video controller, hard disk controller, etc.) and the motherboard inside the computer. The contacts look like copper or gold fingers.

Do not worry if you don't yet have what a motherboard is. You don't need

to know anything at all about electronics. You don't even have to understand what a contact is to repair your own computer successfully.

The connections between the ribbon cables and the controller cards are also trouble. Also watch the connections between the ribbon cables and the floppy and hard disks. Both ends of cables joining your computer to the printer or modem also have pretty contacts. Even the place where the power cable plugs into your computer and into the wall socket are contacts. (You would be amazed at how many "broken" computers are simply a loose power cord!)



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## The Tools

To repair your computer, you need only three things: two screwdrivers, some isopropyl alcohol, a bottle of tape prepreg, and a bottle of contact cleaner. I use a black MasterCraft 2 1/2" Phillips SS-3255-6 screwdriver from Canadian Tire. It has a distinctive black vinyl-plastic chrome steel blade that does not tend to mark the way most screwdrivers do. I take one a blue MasterCraft 1 1/8" X 3" SS-3600-4 slotted screwdriver, again from Canadian Tire.

A foam-tipped stick looks like an oversized Q-tip, except the foam has no cotton fluff behind. You can get these at electronics supply stores.

You can get isopropyl alcohol in any drug store. It may be labelled as isopropyl alcohol or simply rubbing alcohol. Make sure you get the pure stuff, not something with moisture and water.

For contact cleaner, I use 100% Gonales-1100L Red liquid from Gon Laboratories, 1175-9 Industrial Avenue, PO Box 1, Escondido, CA 92035-0051 (619) 743-7143. You can buy a two-ounce bottle for about \$25 at radio or electronics supply stores. That's by itself enough to test thousands of computers.

A small gut driver and some self-tensioning pliers may also prove helpful.

## The Secret

To repair your computer you simply have to do two things:

1. Clean the contacts.
  2. Tighten any loose contacts.
- There is cleaning and there is **CLEANING**. I will tell you about the simple type of cleaning first. Once you have tried three means and find more confident, you can do the more daring types of cleaning. Done for tightening.

## Turn Off The Power

The number one rule is **TURN OFF THE POWER before you do ANYTHING**.

This includes the power to your computer, monitor, printer — everything. This is not to protect you from shock. This is to protect the computer from damage. If you connect or disconnect anything while the power is applied, you stand a good chance of damaging the electronics. Leave the power cord plugged into itself, however, since this will help drain any static.

## Static

In Vancouver, static electricity is not a serious problem except for during a few February days. In Alberta and the BC Interior, static is a major problem all winter long. To avoid damaging your computer from static while you are repairing it, take these precautions:

1. Take off your shoes, especially rubber-soled shoes.
2. Touch the case of the computer before you touch anything else inside.
3. If you plan to do a lot of repair work, buy a grounding wrist strap to keep you grounded the whole time you work on the computer.
4. Any time you take cards out of the computer, immediately put them in an anti-static bag. Your computer dealer will probably be happy to give you a few bags.

## Tightening

For check-out before, avoid repeat touch and tell. If for some reason there is an out, dirt or breakage, the electricity control flow. Tightening a loose contact simply





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press the two metal parts together. This does not do much good if the surfaces are dirty, since then the dirt keeps the line.

First, just look for something loose, such as a cable hanging half off. Then tighten that up, just pushing it on properly. If that does not work, then mechanically clean everything and finally, systematically tighten everything up.

The screws on the computer are lightweight, so do not put much muscle into your tightening or you will soon strip the threads.

### Tightening External Contacts

Turn off the power on everything. Then take a small slotted screwdriver and gently tighten up the screws that hold the cables onto the back of the computer. As I warned before, don't overdo it. These screws are delicate.

Then look at the other ends of the cables where they attach to the monitor, printer, modem, etc. Press these cables on firmly, and tighten any screws or clamps.

Turn the machine on and see if that makes the trouble go away.

### Tightening Internal Contacts

If the computer still does not work, turn the computer off and open the covers. You may have to make a few screws. Put them in a bowl where they will not get lost.

Look at all cables inside, and push back ends firmly onto the connections. There will be cables from the hard/diskette controller to the floppy and hard disk. There will be some more from the multi-

I/O card to the rear serial connection. There will be links to connections supplying power from the metal power supply box to the hard and floppy drives.

You don't have to understand anything about what the cables are for just make sure both ends of each cable are firmly attached.

Put the case back on and turn the machine on and see if that makes the trouble go away.

### Tightening Card Contacts

When you had the covers off, you may have noticed eight slots across the back of the computer. Most are empty, but some have cards sitting in them upright.

Power off, then you can open the covers again, and temporarily remove any cables coming out the rear or sides of the cards. Before you remove cables, label them with a Sharpie fine-point permanent marker to help you remember where they go and which way goes up.

There is a single screw that holds each card in the slot. Undo the screw. Lift the card out, and press the card back in again to reset it firmly. The grid marks on the bottom of the card will fit into the slot. Cards have little metal tabs on the bottom that sometimes have to be bent slightly to get them to fit. Seat the card firmly. Make sure the right amount of "give" is showing — that the card is so deeply seated as to be invisible.

Make sure you put the card back into the same slot that it came from, and reattach all cables in exactly the same way they were attached before. Be careful. It is very easy to strip a ribbon cable over by one pin by mistake. You have to

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be 100% accurate about getting cables back too correctly. If you hook a cable up incorrectly you may see a puff of smoke. This does not require great wisdom, just plodding methodical care.

If you suddenly find yourself not knowing how a cable goes, do not guess! Just find some similar machine, and peek inside for a hint.

Put the disc back on and turn the machine on and see if that makes the trouble go away.

### Vacuum Cleaning

Sometimes the inside of your machine may be so dusty it is pointless to clean contacts because they will get dirty again as fast as you can clean them. Also, tape drive heads and floppy drives have mechanical parts that will fail when they are clogged with dust.

Turn off the power to your computer. Open the covers. Get an ordinary vacuum cleaner and vacuum out the dust using the attachment for cleaning inside the cracks in these fields. Be gentle! Don't knock any of the delicate electronics. Instead, you could use a can of compressed air. I simply use my lungs to blow the dust out.

The fan at the back of your computer blows air out the back and sucks it in the various cracks of your computer—especially the slots in the floppy drives. If you have tapes in your computer, make sure you open your computer, it will look as if it's been laid back. Looking inside.

Try particular attention to the three slots in your floppy drives, and your tape drive slots. While you are at it, vacuum out your printer area, including its air filter.

### Cleaning Floppy Drives

There are inexpensive cleaning kits for floppy drives that come with a disk erasable packet containing a white fiber disc that you soak in alcohol. I have written a program called SCUBUS that soaks the disk heads over the entire surface of the disk cleaning disc. Without SCUBUS, the heads are only 1/80 of the cleaning surface. For \$4.95 I will send you a copy of SCUBUS, along with some other disk utilities. As with all my disks, you are free to make copies and pass them on to your friends.

### Cleaning Mag Tape Drives

Use the special cleaning cartridge according to the instructions on the box.

Then take a four-pointed needle and dip it in acetone. Poke acetone gently inside the tape drive, cleaning out any dust that the vacuuming and cleaning kit missed. In particular, clean the tiny little ball and the sensor pillar on the left side need to detect the end of tape.

If that sensor gets too dirty, the tape drive will not be able to see the holes that mark the end of the tape, and will run the tapes off the reel of these speeds, chewing them to ribbons.

### Cleaning Keyboards

Scantron keyboards get so gummy with spilled drinks, hair or food, that some keys stop working. First vacuum to get the worst of the dirt out. Then spray it all out.

Turn off the power. Try jiggling off a key. Do not pry off the key or lose any other keys. You may never get it on again! If it won't come easily, give up! Presume-

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Let us say that all the cleaning and tightening is to no avail. You should then take your machine to a professional technician. However, if you are feeling adventurous, you could try some simple computer snipping.

You need several working computer very similar to the one that is not working. Let us call the working computer "A" and the defective computer "B". Let us presume, for example, that it hangs on buses and when in the normal way, but there is no picture. We might guess that the problem is either with the monitor, monitor cable or possibly the display adapter card inside the computer. These are the three parts most directly associated with producing the picture.

We label all six computers with a three-digit color A or B, so we will not get confused about parts and know what we are snipping.

We turn off the power on both A and B. Then we swap monitors between the two computers. Then we power on and see what happens. If A is now working and B is still working, we can blame it's connection to the output. If A continues to work and B continues to fail, then we know that B's monitor is suspect. We write down what we did in the log book and what the result was.

If you rule out the monitor as suspect, swap the monitors back the way they were. Then you can then try snipping the monitor cables. Continue until you find the failed component.

Sometimes you will get drunk results, such as both A and B will fail or both A and B will work. Record this, too. Sometimes the failure is intermittent — it comes and goes. Sometimes there are two failed components. Tracking these down will bring out the Sherlock Holmes in you. This is why it is essential to keep the log book.

Once you have found the failed component, you might simply buy a new component and install it if possible, or you might take the failed piece in for repair. Since you have done so much of the detective work already, your repair bill will be low.

Hint — swap the ribbon cables first. These fail often, are easy to test and are cheap to replace.

## The Zen of Computer Maintenance

Tracking down computer problems is, as we said, an exercise in logic. There are many other techniques, such as diagnostic programs. I would like to discuss, but there is not space here.

Meticulously record everything that happens — especially when it's baffling! If you are working away. Nothing is missing any more. Then suddenly, a blinding flash of inspiration hits you about the cause of all the strange behavior you have been seeing. You then need to go back over your notes to see if everything fits. Without records, you would have to do all the experiments all over.

The master requires I talked to you on these bits of advice:

1. Record everything, including anything that happened to the computer just before the problem arose.
2. Work slowly and methodically. Change only one thing at a time.
3. Do not work when you are tired.
4. Do not panic. Random-finding can seem a simple problem until a real one.
5. Simplify by removing as much as possible from the computer that is not

related to the problem.

6. Make sure you have backups, including special backups of your CONFIG.SYS and AUTOEXEC.BAT files.

## Acknowledgements

A special thanks to the BIC electronic conference, Harvey Fishman, Jay Vassilatos, Dave Kilford, Bob Brown and John Senter and others, all helped me write the article.

## Learning More

Is it the computer or the cable? Look in *Upgrading and Repairing PCs*, Que books.

ISBN 0-88229-895-2. I am giving a stack of course called "Upgrading a Home" on presentation, "Repairing Your PC" on mailing, and "Building your Own Computer" on assembly. Call 864-6579 for details.

## Summary

Most computer problems are caused by dirty or loose contacts. All you have to do is clean and tighten all the contacts if that does not work, snipping components with a clean blade will help you locate which piece of the computer is not working.

## Parting Advice

If you clean anything from the article, remember this: **TURN YOUR COMPUTER OFF BEFORE YOU TOUCH ANYTHING INSIDE OR OUTSIDE IT!**

Ready Green is President of Canadian Mind Products, a company that sells AT clones and accessories and does hardware tune-ups on old computers. Canadian Mind Products, #162 - 1029 Mainland, Vancouver BC, V6B 2T4, (604) 684-5525.

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the digital image back to analog form.

### Cheap and Cheerful

While the many functions on mind, it's easy to see how the Frimox FAX300 has Carl come along. The FAX300 is a 3000 baud fax card. It takes up one 4-bit slot in a PC-AT, PC-A/T, and PS/2 models SE and SX. It requires at least 204K of memory, with 256K recommended. Also, a hard drive is almost a must (although many cards can consume a lot of space, even when compressed). The FAX300 supports CGA, EGA, VGA and Hercules graphic adapters. There is a wide range of printer support, with numerous more details to accommodate printer not listed in this particular release. This includes laser printers as well. For graphics (job support), input, there is support for two models from one scanner manufacturer, the Canon D5-5000 and D5-5000. Other scanners can be used, if they support a TIFF, GIF, TIF, uncompressed, TIFF packed or PCX file format.

For the purposes of this review, the FAX300 card was loaded into a two-slot slot, an Epson 285 with 1MB of ram, 40MB hard drive, Ralston PR-1550 printer, Paradise 18 Plus graphics card and NEC Multimedia II monitor; second second 285 system, with 640K ram, 60MB hard drive, Sun NC3000 printer and generic graphics card and TTI, home-chrome scanner. It was very pleasant to have absolutely no problems loading the software and installing the card in other systems. Setup was painless and everything ran well the first time.

The software is very easy to use, and even on a basic system, functions well. There are only a dozen or so commands for full operation and they are all logically based. The input of the menu is symmetrical and, on a color display, are colored to reflect a standard based on monochrome fax machines. After each send or receive file, successful or not, a log entry is made, and can be viewed from the program, sent to the printer, or removed for archival purposes. There is a phone book function for fast access to names and machine files within the program. And the log and phone book are simple ASCII files and can be read and created by a basic editing program. This means that phone lists stored in spreadsheets or word processing programs can be easily converted for use with the product. Image files created or scanned can be in TIFF, PCX or FAX format. A simple point program would go a long way in creating and transferring hard drawings of a scanner was available.

### Background Receive

FAX300 allows for a function called "background receive" to be on or off. The means that when either running the FAX300 software, or running "background receive" on from the DOS level, it is running in a TSR (terminate and stay resident) program. When the phone rings, FAX300 puts a small display box in the corner of your current screen and informs you of the status as the fax is being received. This works well in most cases, although when in some programs, the display box appears (Microsoft Word, for example), although it still functions (although). Also, other TSR programs will cause problems (Sidekick, for example).

### Some Bugs

There is another small problem as well. When receiving FAX300 a location

which required dialing out through a FRX phone system, the continuity of dialing "9" before the number to reach an outside line caused a problem. The manual instructs the user to type a "0,000 0000" to get an outside dial tone. This did not function. I tried various combinations, but could not get FAX300 to send a "9" and then the number. In the theory manual set out as mentioned above, the "9" signifies a delay before dialing the area-digit number. Perhaps that applies here, too, as one should be aware that send this problem is involved or replaced, custom should be applied when using this card with a FRX, Centrix or key phone system.

The answer sent and received in future is from a Frimox 3000 fax machine with no problems at all. The FAX300 software is a good product overall, especially at a price of \$275. Also, it may not be suitable for a major office environment, but would be excellent for the budget-minded home or small-office user with existing equipment to complete the functions of a stand-alone fax machine.

In other words, with the right equipment, this card would deliver substantial savings over a stand-alone fax machine, because you would not be duplicating functions that can be performed with existing equipment. So, the FAX300 fax card appears to be a very good product for the money, keeping in mind its simple function.

Don Wanger provides image scanning services in Vancouver Contact: 504-761-9624

### Rock-bottom Priced Audiotex/Fax Delivery Card Conting

PERMUT, CALIFORNIA, U.S.A., 800-848-1515 (Toll-Free) - Permut Communications Company is looking up a major challenge to the fledgling market of audiotex/fax delivery systems, promising to offer a peripheral card for the PC which offers the same functions as functions of the card. VCD (Voice Card Delivery) is a new technology that this company is developing. The better known card, called the Frimox FAX300 Indefinite Board, for release this summer or this fall. It will be sold for several hundred dollars, compared to the \$10,000-\$15,000 that current audiotex/fax configurations cost. With volume of use, pricing system is being revised to reflect reality, and calls can still be up at 415-480-0015.

For callers, the fax bulletin board card currently works as follows. It answers the phone with synthesized voice, prompts the caller with various options, for example financial, news, restaurant, medical, or sports status. The user punches in a number on their touch-tone phone corresponding to the feature for which they want a fax-based information. The user is then asked to enter their fax number, and they hang up. The fax card then calls the fax phone number and delivers the document. The final version will incorporate the ability of a user to send out hard-copy print on their fax machine if they are calling from a fax/phone combination, while online, real time. (Contact: John Houghton, 815-485-0015)

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## MACINTOSH FAX MODEMS

## Three Fax Modems In Perspective

**Product:** Lightspeed 9600  
**Manufacturer:** Lightspeed Tech., distributed by Computer Friends, 14820 NW Science Park Drive, Portland, OR, USA, 97229, 503/625-0291  
**System Requirements:** Mac Plus, System 6.0 or higher  
**Price:** US \$429

**Product:** OnSite Fax  
**Manufacturer:** Orchid Technology, 45065 North Loop, West Folsom,

CA, USA, 94588, 415/930-0308  
**System Requirements:** MacPlus System 6.03 or higher  
**Price:** US \$209

**Product:** Abaton Interfax 2495  
**Manufacturer:** Abaton Technology Corporation, 500-1195 West Georgia, Vancouver, 604/465-7040  
**System Requirements:** Mac Plus, System 6.0 or higher  
**Price:** Can \$295

## The Scene

The fax can, at times, be an easy sell. You can, at times, be ready to jump on board, there's a few new aspects to consider that may change the way you look at fax transmissions.

Look around any office environment today and what do you see? Computers. And what other necessary office device do you see? Faxmachines. Two different worlds, co-existing. But wait, something new is on the horizon—a hybrid promising to offer the best of both worlds. Enter the fax modem.

For the Macintosh, three manufacturers, Abaton, Orchid and Lightspeed, all offer units that represent the cutting edge in the fax modem arena. All are 9600 baud, Group 3 fax modems with 2400 baud data modems. All offer scheduled send and receive capabilities at the same relative speeds. The ability to create, manage and print files is incorporated in all three. But the real difference is not what they offer but how they offer it. This is the criterion that makes a fax machine stand out.

## On The Surface

As far as the hardware is concerned, the Lightspeed 9600 (Lightspeed) is the simplest modem I have ever seen. It's big, bulky, and blue. It's simply constructed and the power supply is a huge constant that sits on the floor. It does however offer a wide range of status lights that indicate transmission speeds and protocols, although they are jangling a bit. The Orchid, on the other hand, looks like it's meant to be part of a Mac system. It's sleeker, more compact, and compact. It appears well-constructed but upon actual use it turns out to be less than Macintosh. The status light here has a warning habit of breathing (flashing) while the unit is on.

The Interfax 2495 (Abaton) looks and acts like a Mac peripheral. It's well constructed and the ergonomics are pleasing. Like the Orchid, configuration is set by software.

## The First Step

Each of the units comes with a stand-alone software program for the creation and manipulation of files as well as a host of files to control the fax modem itself. The first area to deal with in the most program is the creation of the most common documents. On the whole, the units are the simplest of the three main programs concerning documents. A menu, number and text is recorded for each being and the single numbers can be grouped. Unfortunately, the groups are listed along with the singles and tend to clutter up an already small display. The menu can be edited but the list is not properly updated and some errors in the program. In some cases, entire groups were dropped.

Lightspeed provides for more options for storing data about each number. The groups and singles are displayed separately and groups can also be grouped to form larger distribution lists.

Interfax has similar features but the interface is a more unified. It also has the capability of importing text files from any old delimited file (delimiters, word processors, etc.).

## The Making of a Fax

Creation of a fax typically occurs outside of the main program itself. While in other applications, any fax file can be "printed to disk" after selecting the modem driver (in the chosen) and using the "Print" command. The resolution (whether 300 dpi, or best 200 dpi) can also be controlled at this time. As the files are created they can be sent out (hard or soft) or scheduled for later transmission.

Lightspeed will allow for use of long-

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any number but now a million can't be added to the system at this time and distribution has can't be avoided. The files can be sent (without saving) or saved, but not both. When saving ("printing to disk"), the resolution can't be adjusted. Processing time at 1-800 numbers was the shortest of all three for a sample document with text and graphics in MacWrite II text page with resolution. Small characters (10, 12, 14) were the only package to produce a transmission error throughout the testing. Unlike the other two packages, it does not support back ground transmission.

DataFax will allow access to distribution lists and temporary numbers, but new numbers are also restricted. Processing time was \$55. Send time, at 1:15, was the fastest.

BackFax has the flexibility to add new numbers at this time. Unfortunately, no control of file names is available and all files are strongly named ("Printout About"). Processing was the longest (1:47) because of transmission (1:40). BackFax will also handle straight file transfer to either Oracle or Apple file systems.

### A Wide World

While a single fax broadcast (like file sent to many numbers) can be set up in any program (DataFax does the best job at this), a multiple broadcast (different file sent to many numbers) can only be assembled in the main program shell. BackFax is the weakest here for its own's support. File sets, so a series of single broadcasts must be created and then grouped together. Another alternative to this is to appear to a single file when "uploading" in a different program. Either way, these options are inflexible and proper broadcasting ability is lacking. On the bonus side, transmission reports are supported and at transmission, custom covers can be used.

Assembling a broadcast in Lightfax is a two-stage process. A file is built and then sent to a distribution list. Automatic cover pages are also supported.

InterFax, by allowing distribution lists and file sets to be manipulated at the same time, was the most flexible. It was also the only program to offer a manual copy option if transmission failed. It did not, however, support cover pages, a surely needed feature.

One of the advantages a fax system has over a conventional fax machine is its ability to send higher-quality images. A fax machine sends an electronic image (as opposed to a paper image) and even from that are three times the size of screen fonts. Lightfax and BackFax provided excellent quality (at least resolution) with sharp, readable text even at 5 pages. InterFax had problems here, as it notably with large text sizes (24 pt. and up), where just let more appeared. It also under-distributed even with 10 and 12 pt. text at standard resolution. Graphics were inferior, with distortions in pixel size, and in standard resolution, slight alignment problems were noticeable. This was not a big difference in quality but a difference nevertheless.

### Incoming Faxes

In the receiving department, Lightfax's lack of a worksheet/opened mail metaphor (like the other two have) provides little indication that new faxes have been received. Reception occurred the foreground only, and transmission errors were again uncorrected.

BackFax also is the same by processing a

brief message in any application that has fax access. InterFax does a few better by adding a flashing icon in the menu bar that says when you "open" the fax. Revenue losses for all three systems were approximately the same.

Once a fax is received it can be viewed or printed. BackFax offers limited new capabilities, with only an actual-time or low-resolution mode. Lightfax allows the user to be scaled from 50% to 500%. InterFax again offers the most flexible options by supporting scaling and resolution settings and four viewing orientations. These options can also be used in the actual printing of the fax.

### Keeping Records

All this activity is recorded in journals that track certain elements of a fax. All the packages offer basic tracking but InterFax provides more info on error-reporting than the other two. InterFax is also the more reliable and is used as test data as they can only be reported. BackFax has the widest tracking because errors are just indicated in the send journal but only a processing log.

Poling allows for requesting a fax be automatically sent back in the calling fax device. InterFax supports polling with a security ID option. Lightfax also additionally set up a fax to be polled by another machine (preventing polling). BackFax has no polling feature.

The main program also facilitates conversion of foreign file formats into files and vice versa. Lightfax supports text, point and TIFF formats. InterFax adds PICT to that list. BackFax is the most versatile, additionally handling EPS and GIF formats.

### They Slice, They Dice,

### They Double As Modems

The first in data modems all performed well. The InterFax also supports the MNP 5 protocol for increased performance through advanced compression and error-detection.

How the units handle the switch between data and fax modes was a critical issue. Switching of the Check for error is accomplished through BackFax only. Also, when the modem is not on, the fax send/receive capabilities are turned off; they need to be reset when the modem is finally started on.

A more involved approach is taken by the Lightfax with its use of a DA to control the switching. The InterFax does this one better by automatically switching in data mode only in telecommunications programs. It also uses a control panel document for such functions as immediate fax reception and cancel transmission tabs.

### The Fax Are In

All in all, there are more options than you can shake a stick at. Oracle and Lightfax, while they have some noticeable features, all have problems that make them less useful to use and in some cases unreliable. The InterFax is clearly the winner in software and standard features. It's also a better hardware product. Some would need to be addressed, but overall it's the best performer.

Roger Starbuck is president of InterSupport, a company specializing in support services for the Macintosh, including consulting, on-site instruction, and spreadsheet and database development. (604)681-9087.

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## PRODUCT REVIEW: PC FAX BOARDS

**Product:** SpectraFAX, Personal Link, a 9600 baud PC fax system  
**Manufacturer:** SpectraFAX Corp., 209 S. Airport Blvd., Naples, Florida, 33962 (813-645-5668)  
**Price:** US \$995  
**Rating:** 3.5 on a scale of 1 (lowest) to 4 (highest)

by David Rosenbaum

SpectraFAX is the quiet leader in fax board technology. Besides this product,

the company also designed the Intel Connection Coprocessor and Panasonic Fax Partners, both mentioned earlier for PCs.

What you get with the SpectraFAX card is some 20-minute hardware, a 9,600 baud fax modem which can send a full page of copy in 15 seconds, and software which allows you to transmit ASCII documents into facsimile-based remote documents you receive as PC Paintbrush files. (A copy of Version 1.0 of the remarkable 2.0-4i drawing pro-

gram is included.)

More selling in the software: SpectraFAX included some tricks here it didn't get Intel or Matsushita. If you work closely with the company, there are some wonders to be had, including the ability to combine full-size and half-size documents on the same sheet. The standard package, Personal Link, is easy to use and quick, with simple menus for choosing the file to fax, sending a phonebook of fax addresses, and choosing which addresses to send files, and for

scheduling mailings for latest night. You can even add a cover sheet, either with your own favorite word processor or Paintbrush.

Our quibbles with the product are just that, quibbles, and will moderate the fervor with the next release of software. On the phone book front, you're asked for a phone number which is used in a file analyzer—there's another place for you to post a "voice" number. Where it adds for some it really saves the company, and otherwise. Also, the board can get confused by simple game-control commands such as Alt-T for a new page. When we tried to send a page with this character updated, the program hung up and decided what we were sending wasn't ASCII.

#### Ratings

**PERFORMANCE/PRICE:** 3.5 You'll get a better price buying this product from Panasonic or Intel, otherwise this would be a 4.

**USEFULNESS:** 3.75 A fax card is a must for PC owners who are sending faxes out. For receiving, you may still want a fax machine, which can be left on all the time.

**MANUAL:** 4.0 Documentation comes in the form of a well-written user manual, but you likely won't need it. The menu are self-explanatory.

**AVAILABILITY:** 3.0 You need to buy this directly from the company. If you're going to your local computer store, the same product can be seen in boxes from Intel or Panasonic, however.

**Product:** Connection Coprocessor, the card for the PC

**Requirements:** PC, XT, AT, 80386, and 100% compatibles with graphics-compatible dot matrix or laser printer

**Manufacturer:** Intel, 2402 West Beaverley Rd., Phoenix, AZ 85027, 602-629-7360

**Price:** US \$695

**Rating:** 3.425 (on a scale of 1 to 4 lowest to highest)

by T. Ross

The ever-selling software that comes with Intel's Connection Coprocessor is simple and easily installed. If the user's computer is equipped with expanded memory or memory capable of being used as expanded memory, the programs are loaded into it. This lets the Connection Coprocessor be on short in the background while the user is busy doing another task.

A new addition to the software for fax transmissions is that the user does not have just a cover page, but can add a scanned or developed logo to that cover page. This provides an attractive ID to the critical information on the cover page.

It must be remembered that if the user has "call waiting" on the line in which the Connection Coprocessor is connected, that telephone feature can interfere with Connection Coprocessor operation. The call-waiting feature will beep-disconnect the fax or motion if another call comes in during use. While a user can disable the call-waiting phone feature for outgoing calls, nothing can be done for incoming connections.

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*If sending multiple pages by fax to multiple sites unattended (i.e., broadcast faxes) is the user's desire, this may be the answer. And no thermal paper!!!*

The graphics program that is packaged with the Connection Coprocessor is antiquated and does not function readily or well by today's standards. It is a serious short coming in an otherwise nice package.

The package provides a function to compress a 150 column x 104 line page into a regular 8.5 x 11 inch page. The function is great except that the user has to compress the entire document or nothing at all. In other words, the user cannot format compression on a page-by-page basis.

When the Connection Coprocessor is doing its job it works very efficiently and well. The software and the board make a lot of decisions about what is the best way to communicate with the other end of the loop based on information the user

gives it and the introductory information from the other end. However, when the user wants sending there is no viable way to keep up with the program. Thus, the user doesn't know when the phone will be busy to use for something else—no problem if the user has a dedicated phone line.

In major short coming in the same one all the resources have—the files are not addressable by a word processor. The difference between bit maps and ASCII is a format in the program. Connection Coprocessor does direct ASCII (the other end of the loop can read it) but it's an automated choice.

Intel's Connection Coprocessor Fax Board is mentioned as one of the "10 Most Important Hardware Introductions of 1989" in the Personal Computing October 1989 issue.

#### Rating

**PERFORMANCE** 5.5 The efficient operation in the background is much improved over previous boards and software. However, the antiquated graphics package included is cumbersome. Also, the software does not let the user know when a fax transmission is in process or completed.

**USEFULNESS** 5.5 Intel's Connection Coprocessor is quite useful if the user needs more than one communication a day to others which are fax-based. It is faster, more convenient, and more precise than a public fax machine. It also owns regular fax machine graphics printer fax board copy.

**MANUALS** 4.5 well done & extensive.

**AVAILABILITY** 4 The Connection Coprocessor can be purchased at numerous outlets.

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4 (highest)

## by Wendy Woods

I liked it. Sure it has its drawbacks, you've heard about those already and you'll read about them here, but nobody who possessed it put their finger on what I considered the most difficult hurdle in using this new machine. That was the press and bludge of the corners of handwriting. MS-DOS laptops. They'd boot and suffer about any being forced to sit around that hellish unit, "stick on a Macintosh, hit that 'x' what you get" they would laugh. Gosh, make you feel like crawling under the nearest rock. There they were, working away with laptops for the size and weight of the folders under their arms.

Consume may have been confident in the Portable but it was the place where it was put to the test. Apple's success story was the workhorse for one daily bludge of Cowles stories at CNET, CompuServe, Newsnet, and America Online—44 in all, consuming the talents of seven Newbury reporters. All these stories were uploaded to Golem, downloaded to my Portable as the Cowles press room, edited, and reuploaded to Golem until other papers.

The machine performed as advertised—a smaller, more portable Macintosh with a long battery life. The trouble it fit into a case the size of an overnight bag allowed it to fit neatly into the luggage compartments, but did not admit a ride on any knees. Know any toddlers for this.

Installed inside was a beta version of Megahertz Corporation's Easy-Talk Modem, the only one shipping at the time. This Hayes-compatible 2400 baud modem worked, which I installed in a case inside the Portable, working reliably, and is the only alternative to Apple's own modem for the Portable.

I also have high praise for the battery. The Portable rode with me on the most demanding of trips. The 10-hour claim on the Len Taylor, the last-out battery's long life. We kept it on about of the time, doing work on the table top of the dining car. It held up all the way, and when we arrived the battery wasn't even halfway drained.

The drawbacks of the machine were clearly, number one, as weight—20 pounds.

Now it's available to most journalists the screen. While the response time is clearly faster than your average liquid crystal display, not by a great deal. The quickness of access of the screen, the active matrix LCD is just there but it's clear. After evening, after being so close to the machine for over three hours I'll

correspondent's reports, I was seeing double, the result of peering at the dark screen which poorly reflected light and creating double images when viewed from an angle.

Let's talk about that mouse substitution. The trackball sits right. Lots of people like trackballs. But they do take some getting used to.

The only other problem was the frequent "clicks" of the power supply which irritate the hard disk. As the new line is a masterpiece of power conservation, it powers up each time information must be retrieved from the 40 megabyte hard disk. This causes a delay of up to 10 seconds between entry of a command, and execution of it by the machine. In the situation the screen freezes up and one must wait ... wait ... wait. After a while this became rather annoying.

Okay, this appears to be a pain of the machine. Were it any other workstation's computer, it would be. But there is something to be said about Apple's new which is unique of virtually any other computer company's users. We are a patient lot. We can wait until the next improvement comes along, as the machine serving the duty of taking me Macintosh out on the field was not little car, using it on the road despite the drawbacks.

Would I buy it, though? No. It's still too expensive, still too clumsy for me. But I can't resist coming to hand for the corporate case as a research instrument has a portable Macintosh. For those, price is no obstacle.

My last drawback is becoming supply of information. Portables now, slowly, find each other among a parallel. It'll be interesting to see how it's doing in about six months.

## Rating

**PERFORMANCE/PRICE:** 3. This G600-based unit is slow, has too little memory to use the address Multitasking (see megabyte). The screen, while standard with a quick response time, is difficult to read. The big plus is the long battery life—10 to 22 hours.

**USEFULNESS:** 4.0. Let's face it, most of us Macintosh users could use one. MANUAL 4.0. Documentation comes in the form of various self-study manuals, including a smaller abstract and manual to help along on the road. I always found the answers to all my questions when reading them. As with all Macintosh products, however, the best piece about the machine is that you seldom need to use them.

**AVAILABILITY:** 5.0. Apple supply is expected by the spring.

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